

CLAIMS

What is claimed is:

1. A metalliferous electrode material at least for secondary elements, wherein the metalliferous electrode material includes at least one metal oxide as catalyst for the hydrogenation or dehydrogenation.

2. A metalliferous electrode material according to claim 1, wherein the metal oxide is a mixed oxide.

3. A metalliferous electrode material according to claim 1, wherein the metal of one or both of the metal oxide is a rare earth metal.

4. A metalliferous electrode material according to claim 1, wherein the metal has a nanocrystalline structure.

5. A metalliferous electrode material according to claim 1, wherein the catalyst has a nano-crystalline structure.

6. A method of producing a metalliferous electrode material at least for secondary elements comprising the steps of subjecting the metalliferous material, and a catalyst to a mechanical grinding process.

(Claim 7 is eliminated.)

8. A method according to claim 6, wherein the metalliferous material is first subjected to said grinding process and the catalyst is subsequently added to the grinding process.

9. A method according to claim 6, wherein the catalyst is first subjected to the grinding process and the metalliferous material is subsequently added to the grinding process.

10. A method according to claim 6, wherein the grinding process is performed in a protective inert gas atmosphere.

11. A method according to claim 10, wherein the inert gas is argon.

12. A method according claim 6, wherein the duration of the grinding process is in the range of 1 to 200 hours.

13. A method of manufacturing a metalliferous electrode material usable as an electrode material at least for secondary elements, comprising the step of forming at least one metal oxide at least on the surface of the electrode material in situ by contact with oxygen from elements of the electrode material or by direct oxygen admission.

14. A method according to claim 13, wherein the surface of said electrode material is chemically activated before being exposed to the oxygen for forming the oxide.

15. A method according to claim 13, wherein the surface of the electrode material is mechanically activated before it is exposed to the oxygen to form the oxide.